REMARKS

In the office action, the examiner has rejected claims 21 - 30 as obvious over US 2003/0216496 (Mohanty) in view of WO 93/11190 (Maxfield). Claims 21 - 30 are also provisionally rejected on the ground of non-statutory obviousness-type double patenting as being obvious over claim 3 of co-pending application No. 11/628,625 (US 2008/0069993).

In the "Response to Argument" in paragraph 7 of the office action, the examiner argues that claimed recitation of "the substituent bonds to a silicon atom of the substituted silyl group" in claim 21 last two lines does not necessarily mean that the substituent directly bonds to a silicon atom of the substituted silyl group.

Claim 21 has been amended to change the recitation of "the substituent bonds to a silicon atom of the substituted silyl group" to "the substituent directly bonds to a silicon atom of the substituted silyl group" in order to make the meaning clearer.

Support for the amendment to claim 21 is found in the applicant's specification at lines 18 to 25 on page 19 and is shown in FIG. 1B. No new matter is incorporated by the

amendment.

Claims 21-25

The rejection of claims 21 to 25, is respectfully traverserd because neither Mohanty or Maxfield discloses or suggests at least the claimed "the substituted silyl group further comprises a substituent selected from the group consisting of an amino group, an epoxyethyl group, an epoxyethyloxy group, a vinyl group, an isopropenyl group, a 1-phenylvinyl group, a 4-vinylphenyl group, an isocyanate group, and a hydroxyl group and the substituent (directly) bonds to a silicon atom of the substituted silyl group" recited in claim 21, second paragraph.

First, Mohanty fails to disclose "the organically modified layered silicate comprising a layered silicate and a substituted silyl group" recited in claim 21, as stated by the examiner in the first paragraph on page 3 of the office action. The limitation of "a substituted silyl group" recited in claim 21 is not present. Still further, the "organic onium ions" disclosed in paragraph [0061] of Mohanty does not correspond to "a substituted silyl group" recited in claim 21.

Second, Maxifiled does not disclose or suggest the feature recited in the second paragraph of claim 21, for the

reasons (a), (b), and (c) discussed below.

(a) "R^1" and "R" of "$(-)_nSiR_{(4-m-n)}R^1_m$" disclosed in, for example, line 26 on page 10 to line 12 on page 11 of Maxfield are generic and do not disclose or suggest a species of "a substituent selected from the group consisting of an amino group, an epoxyethyl group, an epoxyethyloxy group, a vinyl group, an isopropenyl group, a 1-phenylvinyl group, a 4-vinylphenyl group, an isocyanate group, and a hydroxyl group" (for sake of simplicity, the phrase "the group consisting of an amino group, . . . a hydroxyl group" is denoted as "the first Markush group") recited in the last paragraph of claim 21, although "R" and "R^1" may comply with "the substituent bonds to a silicon atom of the substituted silyl group" in the feature recited in claim 21.

(b) "R^1" such as "alkyl . . ." disclosed specifically in, for example, the descriptions at line 13 on page 11 to line 14 on page 14 of Maxfield does not correspond to "a substituent selected from the first Markush group" recited in claim 21, because "alkyl . . ." for "R^1" include none of the options "an amino group, . . . a hydroxyl group" included in the first Markush group.

(c) "R", that is, "$-R^3-Z^3$" disclosed specifically in, for example, the descriptions at line 13 on page 12 to line 14 on page 14 of Maxfield does not correspond to "a substituent

selected from the first Markush group" in the feature recited in claim 21, because none of the options "an amino group, . . . a hydroxyl group" included in the first Markush group correspond to "$-R^3-Z^3$" disclosed specifically in Maxfield. More specifically, each of "an amino group", "a hydroxyl group" and "an isocyanate" group" lacks a portion of "R^3" in "$-R^3-Z^3$" and can not be represented by "$-R^3-Z^3$". Furthermore, each of "a vinyl group", "an isopropenyl group", "a 1-phenylvinyl group", and "a 4-vinylphenyl group" lacks a portion of "Z^3" in "$-R^3-Z^3$" and can not be represented by "$-R^3-Z^3$". Moreover, each of "an epoxyethyl group" and "an epoxyethyloxy group" can not be represented by "$-R^3-Z^3$", because an "epoxy" group is not included in any of portions of "R^3" and "Z^3" in "$-R^3-Z^3$".

The markush group of the last paragraph of claim 21 is not disclosed or suggested in either Mohanty or Maxifiled or the references when considered together. Claim 21 and claims 22 to 25 depending therefrom are not obvious.

Claims 26-30

In claim 26, neither Mohanty and Maxfield discloses or suggests the claimed "the substituted silyl group bonding to the layered silicate and comprising a substituted or non-substituted alkyl group," (claim 26, first paragraph lines

5-7) or the claimed "wherein the substituted or non-substituted alkyl group is a substituted first alkyl group, the substituted first alkyl group comprises a substituent selected from the group consisting of an amide linkage, an ester linkage, an N-oxymethyleneamino group, and an N,N-di(oxymethylene)amino group, the substituent bonds to a terminal of the first alkyl group, and the substituent comprises a non-substituted second alkyl group" as a Markush group in the second paragraph of claim 26.

First, Mohanty fails to disclose "the organically modified layered silicate comprising a layered silicate and a substituted silyl group" recited in claim 26, as the examiner states at first paragraph on page 3 of the office action, in particular, the "substituted silyl group" recited in claim 26. Additionally, the "organic onium ions" disclosed in paragraph [0061] of Mohanty does not correspond to "a substituted silyl group" recited in claim 26.

Second, Maxifiled does not disclose or suggest the Markush group of the second paragraph of claim 26, for the following reasons (d), (e), and (f).

(d) "R^1" and "R" of "$(-)_nSiR_{(4-m-n)}\ R^1_m$" disclosed in, for example, line 26 on page 10 to line 12 on page 11 of Maxfield are generic and do not disclose or suggest a species of "a substituted or non-substituted alkyl group," (claim 26, lines

6-7) or "wherein the substituted or non-substituted alkyl group is a substituted first alkyl group, the substituted first alkyl group comprises a substituent selected from the group consisting of an amide linkage, an ester linkage, an N-oxymethyleneamino group, and an N,N-di(oxymethylene)amino group, the substituent bonds to a terminal of the first alkyl group, and the substituent comprises a non-substituted second alkyl group" (claim 26, second paragraph) (for sake of simplicity, the phrase "the group consisting of an amide linkage, an ester linkage, an N-oxymethyleneamino group, and an N,N-di(oxymethylene)amino group" will be denoted as "the second Markush group" below) included in the feature recited in claim 26.

(e) "R^1" such as "alkyl . . ." disclosed specifically in, for example, the descriptions at line 13 on page 11 to line 14 on page 14 of Maxfield does not correspond to "a substituted or non-substituted alkyl group," "wherein the substituted or non-substituted alkyl group . . . comprises a substituent selected from the second Markush group, the substituent bonds . . . a non-substituted second alkyl group" recited in claim 26, because "alkyl . . ." for "R^1" include none of the options "an amide linkage, an ester linkage, an N-oxymethyleneamino group, and an N,N-di(oxymethylene)amino group" included in the second Markush group.

(f) "R", that is, "$-R^3-Z^3$" disclosed specifically in, for example, the descriptions at line 13 on page 12 to line 14 on page 14 of Maxfield does not correspond to the claimed "a substituted or non-substituted alkyl group," or the claimed "wherein the substituted or non-substituted alkyl group is a substituted first alkyl group, the substituted first alkyl group comprises a substituent selected from the second Markush group, the substituent bonds to a terminal of the first alkyl group, and the substituent comprises a non-substituted second alkyl group" as recited in claim 26, because the configuration of "a substituted or non-substituted alkyl group," "wherein the substituted or non-substituted alkyl group is a substituted first alkyl group, the substituted first alkyl group comprises a substituent selected from the second Markush group, the substituent bonds to a terminal of the first alkyl group, and the substituent comprises a non-substituted second alkyl group" ("a substituted or non-substituted alkyl group" = "a substituted first alkyl group" - "a substituent selected from the second Markush group" - "a non-substituted second alkyl group") can not be represented by "$-R^3-Z^3$" (including "$R^5-Z^2-Z^3$" and "$(R^5-Z^2)_r-R^5-Z^3$") disclosed specifically in, for example, the descriptions at line 10 on page 13 to line 14 on page 14 of Maxfield.

Thus, the limitations recited in claim 26 are not

disclosed or suggested in Mohanty or Maxifiled or the references taken together. Claim 26 and claims 27 to 30 depending therefrom are not obvious over Mohanty and Maxfield.

The Double Patenting Rejection

The double patenting rejection based upon claim 3 of co-pending Application No. 11/628,625 is respectfully traversed because claim 3 is dependent upon claim 1 and includes all of the limitations of claim 1. The structure of claim 3 is a mere part of the whole claim, and cannot be used as the sole basis of a double patenting rejection.

The phyllosilicate recited in claim 3 of the co-pending application is a mere part of the whole claim, and can not be used alone for the double patenting rejection.

Claim 1 of '625 is entirely different from applicant's claimed invention. The limitations of claim 1 are not even related to applicant's claims 21 and 26. Applicant's specification contains no disclosure which can possibly support the limitations of claim 1 of '625. The examiner has not shown that all of the limitations of claim 3 (including claim 1) can be interpreted to mean applicant's claimed inventions, See In re Vogel 164 USPQ 619 (CCPA 1970).

In General Foods Corp v. Studiengesellschaft Kohle

mbH, 972 F.2d. 1272, 23 USPQ2d 1839 (Fed.Cir 1992) the court held that double patenting is altogether a matter of what is claimed and that ignoring 8 out of 9 steps of a patent was not what was claimed. The court required that claims be read as a whole. In General Foods, the court stated that the claim was not merely for one step, but for all. This is not different than this rejection where the examiner has failed to consider the limitations of all of claims 1 and 3 of the '625 application. See also Chisum on Patents Section 9.03[1][b].

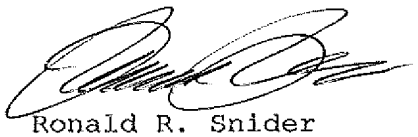
This rejection must be withdrawn.

CONCLUSION

In view of the foregoing, the present application is clearly in condition for allowance and an early indication to that effect is earnestly solicited.

The Commissioner is authorized to charge any fees to Deposit account No. 50-4424.

Respectfully submitted,



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